

Summary of HCP Research, Inventory and Monitoring Activities for 2006-2007



Research Activities- 2006-2007

- Food Plant Study- Peter Tolson, Candee Ellsworth- Toledo Zoo. Mike Penskar, Daria Hyde- MNFI
- Larval Survival/Burn Study— Barb Barton-MNFI, Doug Landis-MSU
- Population Study/MRR- Barb Barton- MNFI
- Transects/MRR Correlation-Barb Barton, Daria Hyde-MNFI
- Degree Day Model- Barb Barton- MNFI
- GIS Habitat Model- Helen Enander, Mike Kost, Daria Hyde-MNFI

Monitoring and Inventory 2006-2007

- Mitchell's satyr Surveys- MNFI, MDNR, SWMLC, TNC
- Associated Species Surveys- Mike Penskar, Dave Cuthrell, Yu Man Lee, Kile Kucher, Nathan Herbert- MNFI
- Fen Surveys- Brad Slaughter, John Paskus, Yu Man Lee, MNFI

GIS Habitat Model



- 135 known fen locations used in maximum entropy modeling approach
- 36 environmental predictor variables derived from:
 - Land cover
 - SSURGO soil survey
 - Daymet climate data
 - Elevation
 - Hydrology
 - Geology

GIS Habitat Model

- Best model contained the following 8 variables
 - NWI class - 35.3%
 - Emergent, Scrub Shrub and Flat
 - Ecoregional sub-subsection - 26.4%
 - VI. 1.2, VI.1.3, VI.2.1, VI.2.2, VI.3.1 and VI.4.1
 - Soil drainage class - 13.8%
 - Very poorly drained
 - Local relief - 10.7%
 - Max change in elevation in 250 m
 - Proportion of wetland - 6.4%
 - Increased % of wetland in landscape
 - Current land cover class - 3.2%
 - “Other upland deciduous, Mixed upland dec., all wetland classes except “floating aquatic”
 - Circa 1800 covertime - 3%
 - Black ash swamp
 - Soil sand% - 1.2%
 - Decreasing % of sand in soil



GIS Habitat Model



- Model predicted 4.1 % of the study area as suitable
- Set of 10 presence pts and 31 absence pts used to test the model
 - All 10 presence pts predicted as suitable by the model
 - 23 of 31 absence pts predicted as suitable
- Model currently over-predicts habitat suitability
- Further work
 - Compare this summer's field data to the model
 - Compare Max. Entropy model to Classification and Regression Tree model (CART) model, a non parametric approach
 - Finalize a satyr predicted distribution model

Mitchell's satyr Surveys



- Survey methodology
 - GPS track and points taken during timed meander survey by all partners
- First emergence monitored at most sites
 - Flight began 6/19 at IN site and in Berrien Co., MI
 - Last observed 7/13 in MI

Mitchell's satyr Surveys

- 17 extant sites
- None found at 2 historical sites and during 5 de novo surveys
- 7 or 8 of the 17 MI sites considered likely viable
 - Greater than 20 counted during meander surveys
 - Threats are manageable or site undergoing management



Associated Species Surveys



■ Plant Surveys

■ 7 New Plant Records

- 1- White ladyslipper –T
(*Cypripedium candidum*)
- 2-Prairie dropseed-SC
(*Sporobolus heterolepis*)
- 2-Mat muhly grass- T
(*Mulenbergia richardsonis*)
- 1-Pale Avens- SC
(*Geum virginianum*)
- 1-Narrow-leaved reedgrass- T
(*Calamagrostis stricta*)

■ 6 Updated Plant Records

- 1-White ladyslipper –T
- 1 Prairie dropseed
- 4- Mat muhly grass

Associated Species Surveys

■ General Insect Surveys

- 15 New Insect records
 - Angular spittlebug (*Lepyronia anguilifera*)
 - Red-legged spittlebug (*Prosapia ignipectus*)
 - Huron River leafhopper (*Flexamia huroni*)
 - Leafhopper (*Flexamia delongi*)
 - Leafhopper (*Dorydiella kansana*)
 - Tamarack tree cricket (*Oecanthus laricis*)
- 9 updated records



■ Poweshiek Skipper Surveys

- 11 sites still contain Poweshiek, but only 4 or 5 of those sites have what appear to be fairly large, viable populations, A or B ranked

■ Swamp Metalmark Surveys

- Found only at 2 sites of 34 sites visited in MI
- This species appears to be in serious trouble



■ Papaipema moth Surveys (Blacklighting)

- 2 new records *Papaipema beeriana*
- Reconfirmed at one site

Associated Species Surveys



■ Herpetological Surveys

■ Kirtland's snake

- 121 Cover boards at 7 sites
 - Checked 2-5 times per site
 - 15-20 per site
 - None found this year

■ Red bellied, garter, brown

■ Massasauga

- Surveys at 14 sites (26 parcels)
 - Multiple visits to each site
 - 1 reconfirmed in Barry Co.
 - 1 reconfirmed in St. Joe Co.

■ Turtles

- Surveys at 14 sites (26 parcels)
 - Multiple visits to each site
 - 4 Box turtles - SC
(*Terrapene c. carolina*)

Associated Species Surveys

- Frog Call Surveys
 - Blanchard's cricket frog- SC
 - (*Acris crepitans blanchardi*)
 - Surveyed 6 sites (multiple tracts)
 - Reconfirmed 2 records



Fen Surveys



- Surveyed 18 sites
 - Found some fen habitat at 10-12 sites
 - 3 sites appear to be of fairly good quality- BC rank
 - 2 sites of fair quality-C rank
 - Many sites degraded
 - Updated sedge meadow and mesic prairie records as well as known fen sites
 - Next year will continue to coordinate with partners to identify more potential fen locations